Table SI. List of differentially expressed genes detected from three expression profiling datasets GSE18842, GSE30219 and GSE33532.

DEGs	Gene
Upregulated (n=428)	ABCB6, ACP1, ADAM12, ADAMDEC1, ADAMTS12, AFAP1-AS1, AKR1B10, ALDH3B2, ALYREF, ANKRD22, APOBEC3B, ARG2, ARNTL2, ARTN, ASF1B, ATAD2, ATP11B, AUNIP, AURKB, BAIAP2L1, BCL11A, BIK, BIRC5, BLM, BNIP3, BORA, BUB1, BYSL, C10orf2, C12orf56, C12orf66, C15orf48, C2CD4A, C4orf46, C5orf46, CABYR, CALU, CASC7, CBX2, CCNA2, CCNE1, CCNE2, CCT2, CCT6A, CDC25A, CDC25C, CDC45, CDCA2, CDCA3, CDCA8, CDH3, CDK1, CDK5R1, CDKN2A, CDT1, CEMIP, CENPF, CENPH, CENPI, CENPK, CENPL, CENPM, CENPN, MLF1IP, CENPW, CERS6, CHAC2, CHEK1, CIART, CKAP2, CKAP2L, CKAP4, CKS1B, CNFN, COCH, COL11A1, COL3A1, COL5A1, COL5A2, CPD, CRABP2, CST1, CTSV, CTTN, CXCL13, DARS2, DBF4, DCAF13, DCUN1D1, DCUN1D5, DENND1A, DEPDC1, DEPDC1B, DEPDC7, DHFR, DIO2, DONSON, DPY19L1, DSC2, DSCC1, DSG2, DST, DTL, DUS4L, E2F7, ECT2, EGLN3, EIF4EBP1, ELOVL6, ENAH, ENO1, EPT1, ERCC6L, ERO1A, ESPL1, ESRP1, ETV4, EZH2, F12, FAM169A, FAM210A, FAM64A, FAM69A, FAM83A, FAM83D, FAM83F, FAM83H, FANCD2, FANCI, FAP, FAXC, FBXO32, FBXO45, FBXO5, FERMT1, FGF11, FHL2, FLAD1, FNDC1, FOXM1, GAL, GALNT14, GALNT2, GALNT7, GART, GCLC, GCLM, GGH, GINS3, GJB2, GJB6, GMPS, GOLM1, GPX2, GRHL1, GRTP1, GTSE1, H2AFX, HELLS, HILPDA, HIST1H2AE, HIST1H2BC, HIST1H2BH, HIST1H2BJ, HIST1H3F, HIST3H2A, HLTF, HMGA1, HMGA2, HMGB3, HOOK1, HORMAD1, HOXA10, HOXC10, HOXD10, HRASLS, HS6ST2, HSPA4L, HYLS1, IDH2, IGF2BP3, IGFBP2, IGFBP3, IGHM, IGSF9, IL4I1, IQGAP3, IRF6, ITGA11, KCNK1, KDELR3, KIAA1524, KIF18A, KIF23, KIF2C, KIFC1, KISS1R, KLHL7, KNSTRN, KRT80, LAD1, LAMP5, LAPTM4B, LARGE2, LCAL1, LGSN, LINC01296, LMNB1, LMNB2, LOC100507855, LOX, LOXL2, LRP8, LRRC15, LY6K, LYPD1, LYPD3, MAGEA1, MAGEA10-MAGEA5, MAGEA12, MAP7D2, MARCKSL1, MARK1, MCM10, MCM2, MCM4, MCM6, MCM8, MELTF, MEST, MFAP2, MIR3658, MIR6756, MIR7112, MIS18A, MKI67, MLLT11, MMP11, MMP9, MPHOSPH9, MROH1, MRPL12, MRPL15, MRPL42, MRPL47, MRPS12, MRPS30, MSI2, MTFR1, MTFR2, MTHFD2, MXRA5, MYBL2, NANOS1, NCAPG, NCAPG2, NCAPH, NCBP2, NDC1, NDC80, NDE1, NEK2, NET1, NETO2, NFE2L3, NMU, NOX4, NQO1, NUDT1, OIP5, ORC1, ORC5, ORC6, OSMR, OVOL1, P3H4, PAIP1, PAK6, PARPBP, PCDH7, PCNA, PCP4, PDCD2L, PDK1, PERP, PFKP, PFN2, PGF, PGM2L1, PHF19, PHKA1, PI15, PIGX, PITX1, PITX2, PLAU, PLEK2, PLEKHG4B, PLK1, PLK4, PLOD2, PLPP4, PLPP5, PMAIP1, PNPT1, PODXL2, POLE2, POLQ, POSTN, PPFIA1, PPIF, PPP2R2C, PRAME, PRKDC, PROM2, PSAT1, PSPH, PTBP3, PTGFRN, PTK2, RACGAP1, RAD51, RAD51AP1, RAD54B, RAD54L, RANBP1, RFC4, RGS17, RHBDL2, RHNO1, RHOV, RNASEH2A, RNF24, RNFT2, RPL39L, RSRC1, SAPCD2, SBF2-AS1, SBK1, SCG5, SEL1L2, SEMA4B, SERINC2, SERPINE2, SESN3, SFN, SGO2, SGPP2, SHCBP1, SHMT2, SHOX2, SIX1, SIX4, SKA3, SLC16A1, SLC1A4, SLC2A1, SLC2A5, SLC39A14, SLC39A4, SLC39A6, SLC44A5, SLC6A8, SLC7A1, SLC7A11, SLC7A5, SMC2, SNRPD1, SNX5, SORD, SOX4, SPAG4, SPC25, SPDL1, SPINK1, SRD5A1, SRD5A3, SSX2IP, ST14, STIL, STYK1, SUGCT, SYNJ2, TARS, TBC1D7, TCF19, TDO2, TENM4, TFAP2A, TFDP2, THNSL1, THRIL, THY1, TIMELESS, TIMM8A, TIPIN, TK1, TLCD1, TMEM117, TMEM158, TMEM237, TMPO, TMPRSS11E, TMPRSS4, TNFRSF21, TPBG, TPD52, TRIP13, TROAP, TSR1, TWF1, TXNDC17, TYMS, UBE2S, UCHL1, UCHL5, UGT8, VCAN, WDHD1, WDR72, WISP1, YKT6, ZC3H8, ZIC2, ZNF280B, ZNF367, ZWILCH
Down-regulated (n=336)	ABCA6, ABCA8, ACACB, ACADL, ACE, ACVRL1, ADAMTS8, ADAMTSL3, ADARB1, ADCY4, ADH1B, ADIRF, ADRB1, ADRB2, AGER, ALOX5, ANGPT1, ANGPTL1, ANK3, AOC3, AOX1, ARAP3, ARHGAP31, ARHGAP6, ARHGEF15, ARHGEF26, ASPA, ATP1A2, ATXN7, B4GALT1, BTNL9, C10orf54, C1orf21, C1QTNF7, C2orf40, CA4, CAB39L, CALCRL, CAPN3, CASKIN2, CASQ2, CAT, CAV1, CBX7, CCBE1, CCDC50, CCDC85A, CCM2L, CD300LG, CD34, CD36, CD83, CD93, CDH5, CDO1, CELF2, CFD, CFLAR, CFP, CHRDL1, CLDN18, CLDN5, CLEC14A, CLEC1A, CLIC5, CNTN6, COL13A1, COL6A6, CORO2B, CPED1, CSRNP1, CYP4B1, CYYR1, DAPK2, DENND2A, DENND3, DES, DIXDC1, DOCK4, DPEP2, DST, DUOX1, EDNRB, EFCC1, EIF1, EIF5, EMCN, EMP1, EMP2, ENG, EPAS1, ERG, ESAM, EXOSC7, EZH1, FABP4, FAM107A, FAM13C, FAM150B, FAM189A2, FCN3, FGD5, FGF2, FGFR4, FGR, FHL1, FHL5, FILIP1, FLI1, FMO2, FOXF1, FRY, FXYD1, FZD4, GATA2, GDF10, GIMAP1, GIMAP1-GIMAP5, GIMAP6, GIMAP8, GLIPR2, GNAQ, GPA33, GPD1, GPER1, GPIHBP1, GPM6A, GPM6B, GPR146, GPX3, GRIA1, GRK5, GSTM5, GYPC, H2AFJ, HBA2, HBB, HEG1, HIF3A, HIGD1B, HLA-E, HSPA12B, HSPB6, HSPB8, IFT57, IGSF10, IL11RA, IL18R1, ITGA8, ITIH3, ITIH5, JAM2, JAML, KANK3, KCNAB1, KCNT2, KIAA1462, KIAA1683, KLF2, KLF6, LCAT, LDB2, LEPROT, LGI3, LHFP, LIMS2, LINC00312,

Table SI. Continued.

DEGs	Gene
	LONRF1, LRRC32, LRRC36, LRRFIP1, LRRN3, LSAMP, LTBP4, LYVE1, MACF1, MAGI1, MAMDC2, MAP3K3, MAP3K8, MARCO, MCEMP1, MFAP4, MIR22, MIR3945HG, MIR6883, MMRN1, MMRN2, MS4A14, MS4A2, MS4A7, MYADM, MYCT1, MYH10, MYH11, MYO15B, MYOCD, MYZAP, NCKAP5, NDRG2, NEBL, NFIA, NHSL2, NLRC4, NOSTRIN, NPR1, NTNG1, OR7E47P, OSCAR, OTUD1, PALMD, PCAT19, PDCD6IP, PDE2A, PDE5A, PDE8B, PDLIM2, PEAK1, PEAR1, PECAM1, PGM5, PGM5-AS1, PHACTR2, PIK3R1, PIR-FIGF, PKNOX2, PLAC9, PLEKHH2, PLPP3, PNPLA6, PPP1R14A, PPP1R15A, PRAM1, PRKCE, PRX, PTPN21, PTPRB, QKI, RAMP2, RAMP3, RAPGEF2, RASGRP2, RASIP1, RASL12, RBMS3, RBP4, RETN, REV3L, RFX2, RGCC, RHOJ, RILPL2, ROBO4, RTKN2, RUFY2, RXFP1, S100A10, S100A3, S1PR1, SASH1, SCARA5, SCN4B, SCN7A, SDPR, SEMA3G, SEMA5A, SEMA6A, SERTM1, SFTPC, SGCG, SH2D3C, SH3BP5, SHANK3, SHROOM4, SIGLEC17P, SIRPB1, SLC14A1, SLC19A3, SLC39A8, SLC6A4, SLIT2, SLIT3, SMAD6, SNRK, SNX1, SORBS1, SOX17, SPATA13, SPOCK2, SPTBN1, ST6GALNAC6, STARD13, STX11, STXBP6, SVEP1, SYNE1, SYNM, SYNPO2, SYT15, TACC1, TAL1, TBX2, TBX5-AS1, TCF21, TEK, TGFBR3, TIE1, TMEM100, TMEM110-MUSTN1, TMEM139, TMEM204, TMEM88, TMOD1, TNNC1, TNS1, TNS2, TPPP3, TRPV2, TTN, VAPA, VEPH1, VIPR1, VSIG2, VWF, WFDC1, WFS1, WWC2, ZBTB16

Table SII. List of upregulated and downregulated genes selected after the GO and KEGG pathway enrichment analysis.

DEGs	Gene
Upregulated (n=68)	AFAP1-AS1, ALYREF, AUNIP, BLM, BORA, BUB1, CASC7, CCNE2, CDK1, CDKN2A, CEMIP, MLF1IP, CENPW, CERS6, CHEK1, CIART, CTSV, ERO1A, FAM210A, FAXC, HILPDA, HIST1H2BC, HIST1H2BJ, HIST1H3F, IGHM, KNSTRN, LAMP5, LARGE2, LCAL1, LINC01296, LOC100507855, LOC101928076, MAGEA10-MAGEA5, MCM2, MCM4, MCM6, MELTF, MIR3658, MIR6756, MIR7112, MIS18A, MROH1, MTFR2, NDC1, ORC1, ORC5, ORC6, P3H4, PARPBP, PLK1, PLPP4, PLPP5, PRKDC, PTBP3, RAD51, RFC4, RHNO1, SAPCD2, SBF2-AS1, SEL1L2, SGO2, SHMT2, SPDL1, SUGCT, TENM4, THRIL, TMEM237, TYMS
Downregulated (n=47)	ACE, ADIRF, ADRB1, ARHGEF26, CAV1, CCM2L, CD34, CDH5, CLDN18, CLDN5, CPED1, EFCC1, EXOSC7, GIMAP1-GIMAP5, GPER1, HBA2, ITGA8, JAML, LEPROT, LINC00312, LINC01140, LOC100506990, MCEMP1, MIR22, MIR3945HG, MIR6883, MYH10, MYH11, MYZAP, NPR1, PCAT19, PEAK1, PGM5-AS1, PIR-FIGF, PLPP3, PRKCE, RAMP2, RAMP3, RGCC, SERTM1, SIGLEC17P, TBX5-AS1, TMEM110-MUSTN1, TNNC1, TNS2, TTN, WWC2

Table SIII. List of DEGs selected after the PPI network construction.

Gene	Degree	Eccentricity	MCODE_Score	Neighborhood connectivity
CDK1	26	4	10.72	11.65
CHEK1	26	4	10.72	11.54
BUB1	22	5	10.72	12.59
RFC4	21	4	9.85	12.86
PLK1	19	4	9.85	13.21
RAD51	18	4	10.72	14.28
MCM2	16	4	10.72	16.31
MCM4	16	5	10.72	16.25
MLF1IP	16	5	9.85	14.63
MCM6	15	5	10.72	16.80
TYMS	15	5	10.72	16.27
BLM	14	5	10.72	16.93
ORC1	14	5	9.85	16.93
ORC6	11	5	9.00	17.18
CDKN2A	10	4	5.57	14.90
CCNE2	9	5	0.00	18.33
ORC5	9	4	0.00	17.22
PRKDC	9	4	0.00	16.89
FAM54A	8	5	0.00	18.75
SPDL1	7	5	0.00	19.43
SGOL2	6	5	0.00	16.33
BORA	5	5	0.00	22.80
TMEM48	5	5	0.00	19.20
C15orf23	4	5	0.00	21.25
CLDN5	4	4	0.00	8.25
MYH11	4	5	0.00	3.00
PARPBP	4	5	0.00	23.75
RHNO1	4	5	0.00	19.75
ADRB1	3	2	0.00	2.00
CAV1	3	4	0.00	2.67
CD34	3	4	0.00	5.67
CDH5	3	4	0.00	3.33
MIS18A	3	5	0.00	12.33
MYH10	3	6	0.00	3.33
RAMP3	3	2	0.00	2.00
TNNC1	3	6	0.00	3.33
TTN	3	6	0.00	3.33
AUNIP	2	5	0.00	24.00
CENPW	2	6	0.00	9.50
PRKCE	2	5	0.00	17.50
RAMP2	2	2	0.00	3.00
RGCC	2	5	0.00	18.00
SHMT2	2	5	0.00	16.50
ACE	1	3	0.00	3.00
ALYREF	1	6	0.00	5.00
CERS6	1	1	0.00	1.00
CLDN18	1	5	0.00	4.00
GPER	1	3	0.00	3.00
PPAP2B	1	1	0.00	1.00
PTBP3	1	5	0.00	26.00
TENC1	1	5	0.00	3.00

MCODE, Molecular Complex Detection.